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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|----------------------------------|-------------|----------------------|---------------------|------------------|
| 10/028,040 | 12/21/2001 | Nishant Sinha | 150.01140101 | 2997 <i>4</i> |
| 26813 | 7590 | 10/03/2003 | EXAMINER | |
| MUETING, RAASCH & GEBHARDT, P.A. | | | DEO, DUY VU NGUYEN | |
| P.O. BOX 581415 | | | ART UNIT | |
| MINNEAPOLIS, MN 55458 | | | PAPER NUMBER | |
| | | | 1765 | |

DATE MAILED: 10/03/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/028,040

Applicant(s)

SINHA ET AL.

Examiner

DuyVu n Deo

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 December 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-58 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13, 15-25, 27-33 and 35-58 is/are rejected.
- 7) ☐ Claim(s) 14, 26 and 34 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 23 April 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000. Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

2. Claims 1-5, 8-13, 15-18, 21-25, 27-30, 32, 33, 35-37, 39, 41, 43, 45-46, 48, 50, 52, 54-55, 57, 58 are rejected under 35 U.S.C. 102(e) as being anticipated by Sachan et al. (US 2002/0111027 A1).

Sachan describes a polishing method comprising positioning a group VIII metal containing surface to interface with a polishing surface, where in the group VIII metals is selected from the group of rhodium, iridium, ruthenium, osmium, palladium, and platinum

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(paragraphs [0010], [0026], supplying a planarization composition in proximity to the interface, and planarizing the group VIII metal-containing surface, where the composition comprises organic compound such as mercaptoalkyl amine hydrochlorides (claimed organic amine) (paragraph [0026], claim 4).

Referring to claims 16, 25, 28, 32, 33, 41, 43, 49 the composition further comprises of organic acids such as citric, tartaric acids (claimed organic chelating acid or complexing agent) (paragraph [0024]). The composition that uses ceria (CeO_2) abrasives would read on claimed a majority of abrasive particles is CeO_2 (paragraph [0013]).

Referring to claims 37, 46, 55, examples 1-3 shows the polishing method of the noble metal is carried out in one time (claimed one step). And the polishing method is typical carried out in one step (paragraph [0009]).

Referring to claims 48, 49, 52, Sachan shows the polishing method is used in the forming of capacitors where the noble metals are formed on a foundation dielectric and the noble metals are polished by CMP (claimed group VIII metal formed over a patterned dielectric layer) ([paragraphs [0008], [0009]).

Referring to claims 2, 3, 17, 29, an elemental form of Pt would have more than 50 atomic percent (paragraph [0010]).

Referring to claims 8-10, 21-23, the abrasive particles used include ceria, silica, and alumina (paragraph [0026]). These abrasive particles would have a hardness of no greater than about 9 Mohs.

Referring to claim 12, table 1 shows the polishing ratio of the metal to that of the oxide layer is at least 10:1.

Claims 13, 35 have no patentable weight since Sachan disclose organic amine and diene is not necessary to be a part of the composition.

Referring to claims 15, 27, 58, the polishing surface can be a fixed abrasive article (paragraph [0026]).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 6, 7, 19, 20, 31, 38, 40, 42, 44, 47, 49, 51, 53, 56 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sachan as applied to claims 1, 16, 28, 37, 39, 41, 43, 48, 50, 52, 55 above, and further in view of Van Buskirk et al. (US 6,346,741).

Unlike claimed invention, Sachan doesn't describe the composition includes an oxidizing agent such as peroxide. Van Buskirk describes a method for polishing noble metals where he teaches the composition includes hydrogen peroxide (claimed oxidizing agent) (col. 6, line 40-45; col. 8, line 45-60). It would have been obvious for one skill in the art to modify Sachan in light of Van Buskirk because Sachan describes that other chemicals that enhance the activity for removal of the polishing composition for attaining higher selectivity for removal of the target metal layer (paragraph [0011]) and Van Buskirk teaches that H₂O₂ reacting with the noble metal to form product having a lower hardness than the noble metal so that to enhance removal rate of the metal film (col. 8, line 51-60; col. 13, line 1-25).

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Allowable Subject Matter

5. Claims 14, 26, 34 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claims 14, 26, and 34 are allowable because Sachan doesn't describe the organic amine is selected from the group: ethylamine, methylamine, triethylamine, trimethylamine, and combinations thereof.

Claim Objections

6. Claim 47 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form. Claim 47 is the same as claim 44.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to DuyVu n Deo whose telephone number is 703-305-0515.

DVD

NADINE G. NORTON
PRIMARY EXAMINER

